TransPAC4
Award #1450904
Year 1 Quarter 2 Report
1-June-2015 through 31-Aug-2015

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(Prepared by Jennifer M. Schopf)

Summary

During Quarter 2, the TransPAC4 project continued operations to transition from the TransPAC3 project. This report outlines the collaborations and management activities for the second quarter of the project. Operational aspects of TransPAC will be handed over to this project in March 2016.

1. TransPAC4 Overview

The TransPAC project supports two circuits and a set of network services between the US West coast and Asia: 1) The NSF-funded TransPAC 10G Circuit, which runs between Los Angeles, California, and Tokyo, Japan; and 2) The NICT funded JGN-X 10G Circuit, which is used for experimental traffic between LA and Tokyo. A third circuit, the 10G CERNET funded 10G link between Beijing and LA, was handed off to Internet2 in May 2015. These circuits are used in production to support a wide variety of science applications and demonstrations of advanced networking technologies.

TransPAC4 will take over operational responsibilities of these links in March 2016. In the meanwhile, the project staff are negotiating for additional links, as described below.

2. Staffing

Project staff consists of:

- Jennifer Schopf, Director
- Andrew Lee, International Networks network architect
- Hans Addleman, primary TransPAC network engineer
- Alice Jackson, administration

We began the process to hire a Science Engagement Specialist. A job advert is expected to be public in September, with interviews taking place in October.

3. Project Startup and Management

The Project Execution Plan for TransPAC4 was submitted to NSF in August. In addition to standard management plans, it contained a complete WBS (with budgetary estimates) for the life of the project.

MOUs for the project have been delayed in order to better understand Indiana University's internal processes. It appears that all MOUs issued in the past with only a PI signature are not valid according to university regulations. We continue to investigate finding a lighter-weight process for MOUs.

4. Collaborations, Travel, and Training

TransPAC staff participated in various meetings to support ongoing collaborations.

Addleman and Chevalier attended Asia Pacific Advance Network (APAN40), August 7-14 in Kuala Lumpur, Malaysia (http://www.apan.net/meetings/KualaLumpur2015/). Schopf had planned to attend but could not due to illness. Addleman presented in both the Future Internet Testbed (FIT) working group and Network Engineering Workshop, in addition to meeting with NICT/KDDI, A*Star, SingAREN, and universities in that region. Chevalier and John Hicks, I2, led a full day perfSONAR training course, which included hands on work with fourteen LIVA boxes that were given to attendees. Slides from the workshop are available at http://internationalnetworking.iu.edu/archives/index.html. Chevalier's talk generated interest in further improving the regional perfSONAR mesh, and the small nodes that were distributed will be part of the updated mesh deployment. Takatoshi Ikeda-san, who is part of KDDI, NICT, and APAN-JP, is the regional partner coordinating participants to be able to be added to the APAN perfSONAR mesh.

Schopf has initiated planning with ESnet for two Cross Connect Workshop focusing on bioinformatics. The first workshop will take place in Spring 2016, in Berkeley, CA, with a follow on workshop expected 6-8 months later at the IU offices in Beijing. This workshop will be supported with both TransPAC funding and other NSF funding for Cross Connect workshops as part of the planned TransPAC4 science engagement work. Biweekly meetings have been setup to identify the workshop focus and identify possible keynote speakers.

Collaboration with the IRNC AMIS awardee, NetSage, is moving forward successfully, with TransPAC able to be a guinea pig for first deployments of several measurement sources.

Collaboration with the IRNC NOC awardee is moving forward more slowly. As TransPAC currently pays the Global NOC for some services, ongoing support will be seamless however there is a need to re-negotiate pricing. Currently, TransPAC3 pays for a full set of NOC services, but the IRNC NOC is now also being paid directly by NSF, so the TransPAC expenses should be reduced.

5. Circuit Planning

In August, an RFP for a 100G circuit between Seattle and Tokyo was issued. Responses are due back September 10, 2015. At that point, we hope to be able to move quickly and have a circuit in place in time for SC'15 experiments.

After being approached in March to be part of a three-way partnership for an additional 100G collaboration between Internet2, Singaren, and IU, this now seems less likely. Additional conversations will take place in September.

Separate from these circuits, we have been hearing from the community that there is interest in additional capacity using Guam as a waypoint. We intend to continue conversations in this area jointly with David Lassner.

6. Software and Systems Work

Software and systems work for TransPAC are currently covered by the TransPAC3 project. These duties will be shifted to the TransPAC4 project in March 2016.

7. Security Events and Activities

Basic security measures are being maintained, and there were no security incidents to report for this quarter.

We have contacted the CACR to begin work on our Security Plan for the 5 year project. We are currently working through their self-guided forms for a more successful collaboration when their schedule clears up for one-on-one meetings with us.

8. Reporting against Objectives 1-June-2015 through 31-August-2015, Planning for next quarter

From the Work Breakdown Structure for Year 1:

1.1   Planning / Coordination Year 1

1.1.1   Renew current 10G circuit - Negotiate to renew the current TransPAC3 Los Angeles to Tokyo 10G Circuit.

- Circuit currently extended through Feb 29, 2016

1.1.2   Research best new paths and end points - Work with partners in both the Asia-Pacific and United States regions to determine appropriate end points for a circuit landing in Seattle. Identify the most appropriate Asian endpoint for an additional circuit.

- An RFP for Tokyo-Seattle circuit was released. Responses are due back Sept 10. We are also negotiating for circuit to Singapore jointly with Internet2 and Singaren.

1.1.3   Start partner MOU process - Contact partners and start the process of signing Memorandum of Understandings with each.

- Delayed due to IU process needs

1.1.4   Form TransPAC External Advisory Council populated by partner and support organizations.

- Delayed to Q3 due to Schopf illness

1.3   Planning / Coordination

1.3.1   Evolve network architecture - New network designs over the evolution of the 5 year award. This will include 100G circuit speeds, software defined networking / exchanges, possible new peering points, and greater then 10G flows.

- Ongoing

1.3.2   Coordinate with IRNC:NOC winner - Coordinate with the IRNC:NOC awardee to ensure they have a sufficient and appropriate level of access to all of the TransPAC4 equipment supporting international activities. This includes appropriate logs, SNMP access, portal or login access to obtain data not available via SNMP, etc.

- Started – waiting on NOC for pricing changes

1.3.3   Coordinate with IRNC:AMI winner - Coordinate with the IRNC:AMI awardee for the appropriate distribution of flow data, per our own security and data policies, SNMP and other access as appropriate.

- Ongoing – TransPAC will be first backbone to share measurement data

1.3.4   Overall Management of the project

- Ongoing

1.3.5   Project Reporting - Report generation for the life of the project

- Project Execution Plan was submitted in Q2
- Reporting infrastructure in place for more up to date quarterly reporting

1.3.6   Documentation and dissemination

- Website refresh being planned for January 2016

2.6   Outreach

2.6.1   Attend domestic and international conferences for application identification and relationship maintenance

- Ongoing

2.6.2   Coordinate connectivity with existing and new TransPAC Partners

- Ongoing

2.6.3   Ensure connectivity in support of the Large Hadron Collider

- Attendance at LHC meeting this quarter as part of TransPAC3 project

2.6.4 Ensure connectivity in support of Belle-II

- Planned for Q3 when closer to Belle-II operational timeframe

3.1 Operations

3.1.1 Analyze TransPAC3 Flow data in support of research and operations. Develop policy and plan for anonymizing and storing data. Provide data to researchers as requested.

- Primarily part of TransPAC3 in Year 1

4.1 Research / Experimentation Year 1

4.1.1 SDN for DDOS mitigation - Research the feasibility of using SDN technologies for detection and mitigation of DDOS attacks on the TransPAC network.

- Primarily part of TransPAC3 in Year 1